MODIS Team Meeting Minutes

Minutes of the MODIS Team Meeting held on Tuesday February 15, 1994.

Action Items:

73. Complete the MODIS brochure and released for printing. Assigned to Bauernschub 10/18/93. Due 11/15/93.

74. Prepare and submit a Configuration Change Request which revises the definition and impact of levels of software criticality for the MODIS Software Management Requirements Document. Assigned to Anderson 10/26/93. Due 12/ 1/93

75. Determine if the four electronic module boxes can be individually thermal tested in air, or must the thermal testing be done in a vacuum. Assigned to Silva 10/26/93. Due 11/ 9/93

84. Review the Performance Verification Plan with a goal to delete some activities. Assigned to Roberto 2/15/94. Due 3/ 1/94.

85. Submit a CR to split the Software Readiness Review into two reviews. Assigned to K. Anderson 2/15/94. Due 3/ 1/94.

The following items were distributed:

1) Weekly Status Report #125
2) SBRC Memos submission from week #117
3) Minutes of the previous team meeting

Attendees:

✓ Dick Weber	Bruce Guenther	~~June Tveekrem~~ L. Graziani
✓ John Bauernschub	George Daelemans	✓ Bob Martineau
Rosemary Vail	John Barker	✓ Bob Silva
Lisa Shears	Joann Harnden	Ken Brown
✓ Mike Roberto	Patricia Weir	✓ Robert Kiwak
✓ Nelson Ferragut	Mitch Davis	✓ Harvey Safren
Gene Waluschka	Jack Ellis	✓ Ed Knight
Kate Forrest	✓ Ken Anderson	✓ Harry Montgomery
✓ Bill Barnes	✓ Rick Sabatino	Marvin Maxwell
✓ Les Thompson	✓ Cherie Congedo	Bill Mocarsky

MODIS Team Meeting and Other Topics 15 February 94

General

Copies of the MODARCH User's Guide were handed out at the meeting. MODARCH allows electronic access to SBRC's MODIS memos.

Lewis has been given the go ahead to enter into negotiations with Martin Marietta to provide Atlas 2AS launch services.

Focal Plane Assemblies

There are several questions Bob Martineau and others here at GSFC have with regard to the indium bump problem, past experience with bump bonding, details of tests performed and results, and detailed plans for recovery. Bob is working on a list of questions for SBRC. Our goal is to help if we can, but to do this we will need to learn more of the details.

At this time the recovery plan for the indium bumps involves:

1) A spare EM S/MWIR SCA will be temperature cycled 100 times, tested, then temperature 50 times and tested.

2) S/MWIR arrays (two with subarrays and two full up) will be temperature cycled.

3) There will be modeling and analysis.

Bob Martineau mentioned that lot #3 readout integrated circuit (ROIC) tests are still looking good. Parametric tests have been made on lot #4, and thresholds look good. Carlsbad is proceeding with lot #5. Readouts for all focal planes will be ready for lot #3 at the beginning of April. Lot #4 readouts will be ready 3 weeks later and the next lot one month later.

SBRC built 3 FDA (fanout detector assembly - S/MWIR) mockups with large die and three with subarrays. Two opened up after 100 cycles. One FDA withstood 200 cycles. SBRC believes there may be a problem with the way the FDAs are assembled.

For the PC detectors, initial probe tests of lot #2 indicates several good detectors. Lot #3 is at the anti-reflection coating stage. Testing is continuing with lot #1.

Optics

Sequence files for the four focal planes and SRCA will be mailed to Gene Waluschka from Tom Kampe to assure the GSFC optical models for MODIS are kept up to date.

Tim Carnahan will be looking into using Pro Engineer for stray light modeling.

Gene will do some immediate modeling to provide an upper boundary on stray light from the diffuser port, scan mirror, fold mirror, and scan cavity. This initial analysis will involve hand calculations, assumed BRDFs, solid angles, etc. More detailed analysis will follow.

Gene has begun to use MODARCH to electronically access MODIS memos.

Electronics

Mitch Davis has prepared a draft memo on a meeting he had with Bob Joyce to discuss CDR electrical design concerns. The two main issues were:

1) lack of electrical design details at the CDR

2) lack of electrical grounding diagram at the CDR

The result of the meeting was that Bob Joyce would be satisfied with the electrical design if Mitch does the following:

1) Present to SBRC a hierarchical documented electrical design.

2) Generate specific "Request for Action" items which address the deficiency in the current electrical documentation.

3) Generate specific "Request for Action" item which addresses an electrical grounding diagram.

Systems Engineering and Calibration

A telecon was held on February 14th. GSFC attendees included Bill Barnes, Harry Montgomery, Ed Knight, and Mike Roberto. SBRC had Tom Pagano, Neil Therrien, Jim Young, Bob Cooley, and Dzung Phan.

GSFC is reviewing kinematic mount analyses performed by MMAS and SBRC. GSFC will serve as referee, if necessary, unless both SBRC and MMAS find agreement on whether or not the mounts are adequate (see Mechanics).

There is a question about solar diffuser spectralon fluorescing.

Ed Knight has been looking at transmission data for bands 1 through 4, 9 through 19, and 27 through 31. Several bands are just slightly in or out of spec. The measurements on the filters are not going out to the 1 percent level. In order to accurately model expected performance, measurements to at least the 1 percent level would be helpful so extrapolations would not be needed. Bands 9, 29, and 31 have edge range problems. The center wavelength is off for band 19. A waiver has been accepted for band 29 and would be approved for band 19.

Focal plane crosstalk measurements are now being made.

The intermediate cooler window for the LWIR may not be able to be tilted as much as desired to reduce ghosting.

The NIR triplet is being put together now. SBRC is getting ready to mount the triplet in the lens cell.

Scan mirror total integrated scatter measurements were made without the silver coating. These were 0.128% for side 1 and 0.23% for side 2. The scan mirror was therefore sent back to Speedring to get repolished.

Jim Young mentioned a major effort is being undertaken for the Calibration Management Plan.

An Angular Displacement Sensor (ADS) could mount on the same wall as the scan mirror motor according to Bob Cooley. The dimensions of the ADS would be a cube about 4 inches on a side.

Simulation is now being done for a PC channel.

SBRC may not do the full set of crosstalk measurements at the focal plane level.

Science

Harry Montgomery would like to have a system, if possible, so that individuals at GSFC could access test data directly from the MODIS archive or a parallel MODIS archive at SBRC. The idea would be to assure security for the MODIS archive against any damage from the external access to the data.

Mechanics

The kinematic mounts for MODIS are expected to be recalled to MMAS and new mounts will likely be made. The present design of the mounts has received considerable attention at GSFC, MMAS, and SBRC. It is expected that the prospect of reduced loads and some design modifications on the mounts will yield mounts which will be acceptable to all parties.

The MODIS engineering team is very interested in having an opportunity to review the modified kinematic mount designs before hardware is cut.

Quality Assurance

Bob Kiwak is reviewing the materials and processes list.

Software

Rick Sabatino has not yet found any tall poles in the software CDRLs.

Some of the subcontracted GSE hardware is coming with software. Some documentation will be needed for this software.

Thermal

George Daelemans is expecting a test plan for the EM cooler thermal balance test in a couple of weeks from Daryl Schmidt. The test itself has been slipped to mid May.

Mike Roberto February 16, 1994